Notes 1/9 - Factoring Trinomials with a=1

$ax^2 + bx + c$

$a=1$, $x^2 + bx + c$

Factoring = working backwards (UNdistributing)

Key: Find 2 numbers whose product* is $a \cdot c$ and whose sum+ is b.

Ex 1: Factor $1x^2 + 11x + 30$

$(x+6)(x+5)$

Need	*a·c = 30	+b = 11
	15, 2	17 x
	6, 5	11 ✓
	10, 3	13 x

Check: $(x+6)(x+5)$

$x^2 + 5x + 6x + 30$

$x^2 + 11x + 30$

Ex 2: Factor $x^2 - 9x - 10$

$(x-10)(x+1)$ OR $(x+1)(x-10)$

Need	* = −10	+ b = −9
	−10, 1	−9 ✓

NOT $(x-1)(x+10)$ → signs matter!

Ex 3: Factor $2x^2 - 8x - 24$

Hidden GCF of 2!

$$2(x^2 - 4x - 12)$$

×	+
−12	−4
2 · −6	−4 ✓

$$\boxed{2(x + 2)(x - 6)}$$